

## 199-K-143 (C5305) Log Data Report

### Borehole Information:

<b>Borehole:</b> C5305 (199-K-143)			<b>Site:</b> 100-KR-4		
<b>Coordinates (WA St Plane)</b>		<b>GWL<sup>1</sup> (ft):</b> 54	<b>GWL Date:</b> 12/11/06		
<b>North (m)</b>	<b>East (m)</b>	<b>Drill Date</b>	<b>TOC Elevation</b>	<b>Total Depth (ft)</b>	<b>Type</b>
148088.28	570934.41	12/2006	136.498	91.0	Cable Tool

### Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Threaded Steel	2.8	11 3/4"	10 1/4"	3/4"	2.8	90

### Borehole Notes:

Depth of borehole, casing information and depth to water were provided by the BTR. Logger measured casing using a steel tape and rounding to the nearest 1/16-in.

Zero reference = top of ground

### Logging Equipment Information:

<b>Logging System:</b> Gamma4 N	<b>Type:</b> 60% HPGe SGLS	
<b>Effective Calibration Date:</b> 04/06/06	<b>Calibration Reference:</b> DOE-EM/GJ1177-2006	
Serial No.: 45-TP22010A	<b>Logging Procedure:</b> HGLP-MAN-002 Rev.0	

### Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat			
Date	12/11/06	12/12/06			
Logging Engineer	McClellan	McClellan			
Start Depth (ft)	90.0'	34.0'			
Finish Depth (ft)	0.0'	25.0'			
Count Time (sec)	200 s	200 s			
Live/Real	R	R			
Shield (Y/N)	NA	NA			
MSA Interval (ft)	1.0 ft	1.0 ft			
ft/min	NA	NA			
Pre-Verification	DN511CAB	DN521CAB			
Start File	DN511000	DN521000			
Finish File	DN511090	DN521009			
Post-Verification	DN511CAA	DN521CAA			
Depth Return Error (in.)	0.5 low	0			
Comments	No fine gain adjustments made.	Repeat section.			

**Logging Operation Notes:**

Data were collected using Gamma 4, HO 68B-3573. Pre- and post-survey verification measurements were acquired in the Amersham verifier, SN 115. The back of the logging truck was set-up facing south. A centralizer was installed on the sonde. The tool un-weighted at 90.51 ft

**Analysis Notes:**

<b>Analyst:</b>	LEGLER	<b>Date:</b>	08/23/2007	<b>Reference:</b>	GJO-HGLP 1.6.3, Rev. 0
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The pre- and post- verification spectra met the acceptance criteria established for the system but verification spectra files DN511CAA and DN521CAA had criterion outside of control limits (LCL for 1461 cps and LCL 0609cps respectively).

A casing correction for a 0.75-in thick steel casing was applied during analysis. A water correction was also applied during analysis from 54 ft to total depth of borehole.

SLGLS spectra were processed in batch mode in APTEC SUPERVISOR to identify individual peaks and count rates. Concentrations were calculated with an EXCEL template identified as G4Napr06.xls using an efficiency function and corrections for casing, dead time, and water as determined by annual calibrations.

**Results and Interpretations:**

No man made nuclides were found in this borehole.

The KUT concentrations appear to bias high in the presence of water, suggesting that the water correction factors are overcorrecting.

The repeat log section showed good repeatability for depth and radionuclide concentrations, suggesting that the system was operating properly.

**List of Log Plots:**

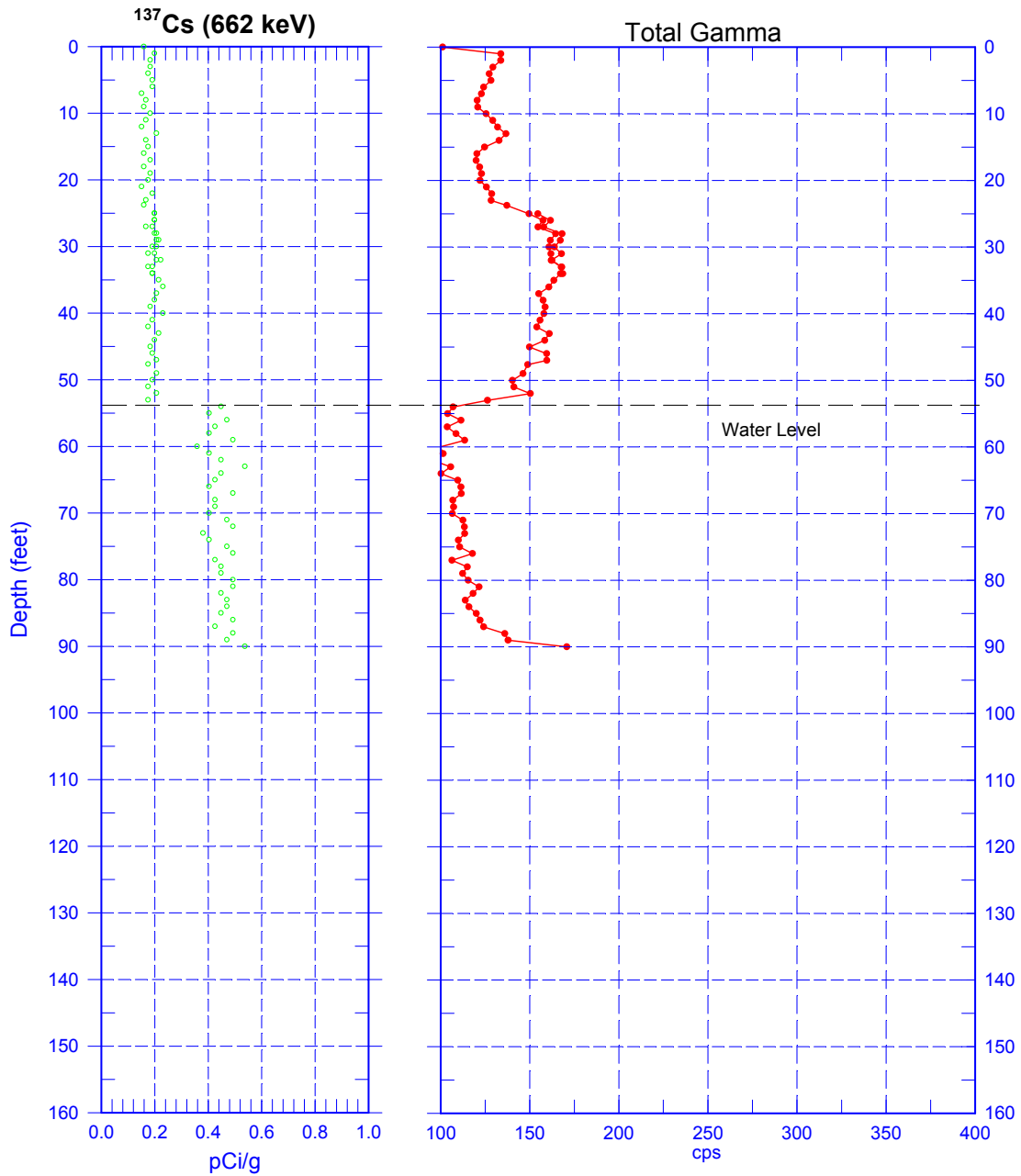
Depth Reference is top of casing  
Depth Scale - 20 ft/inch except for repeat logs

Man-made Radionuclides  
Natural Gamma Logs  
Combination Plot  
Combination Plot (0-140 ft)  
Total Gamma & Dead Time  
Repeat Section of Natural Gamma Logs  
Repeat of Moisture

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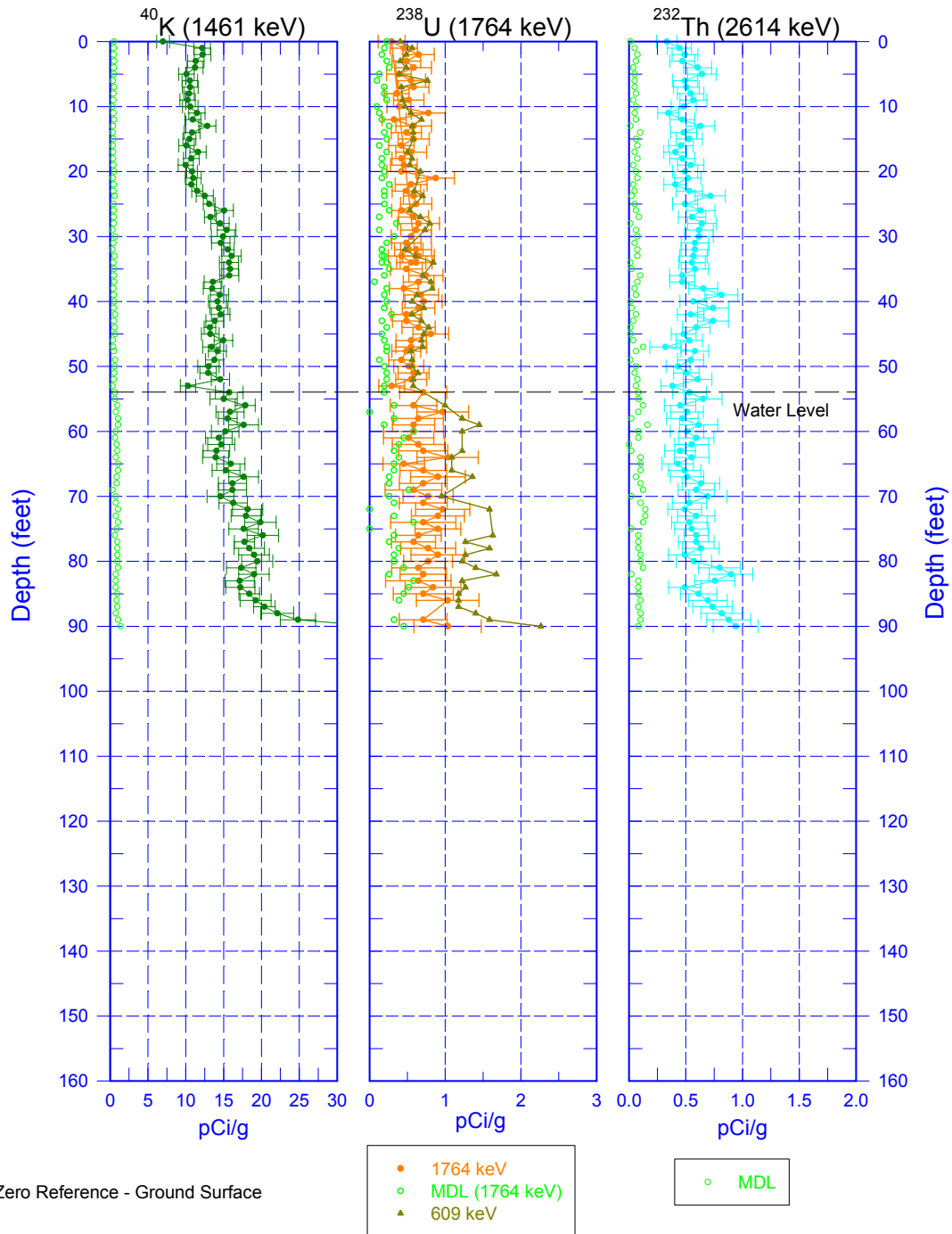
<sup>1</sup><sub>1</sub> GWL – groundwater level

## 199-K-143 (C5305) Manmade Radionuclides

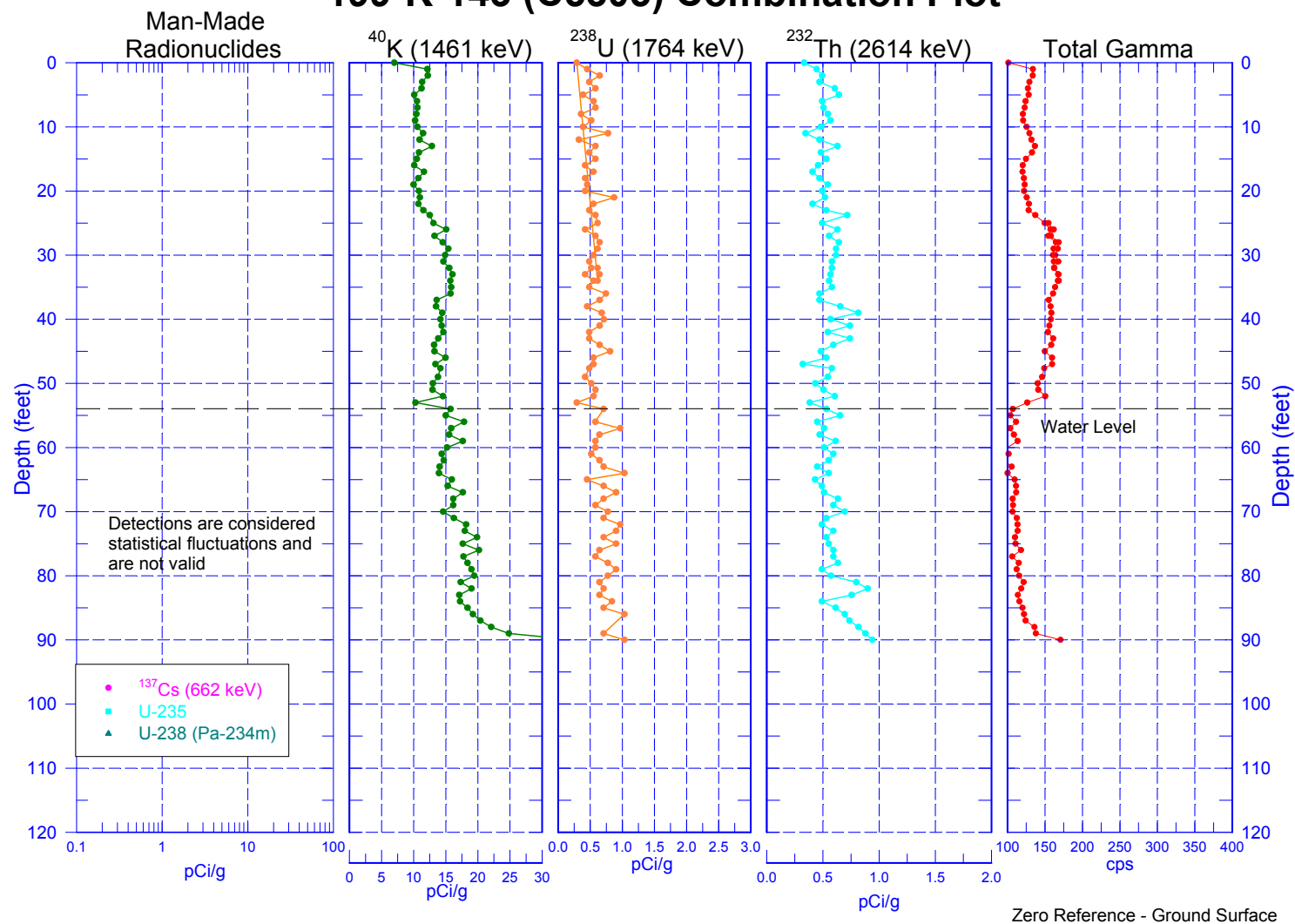


Zero Reference - Ground Surface

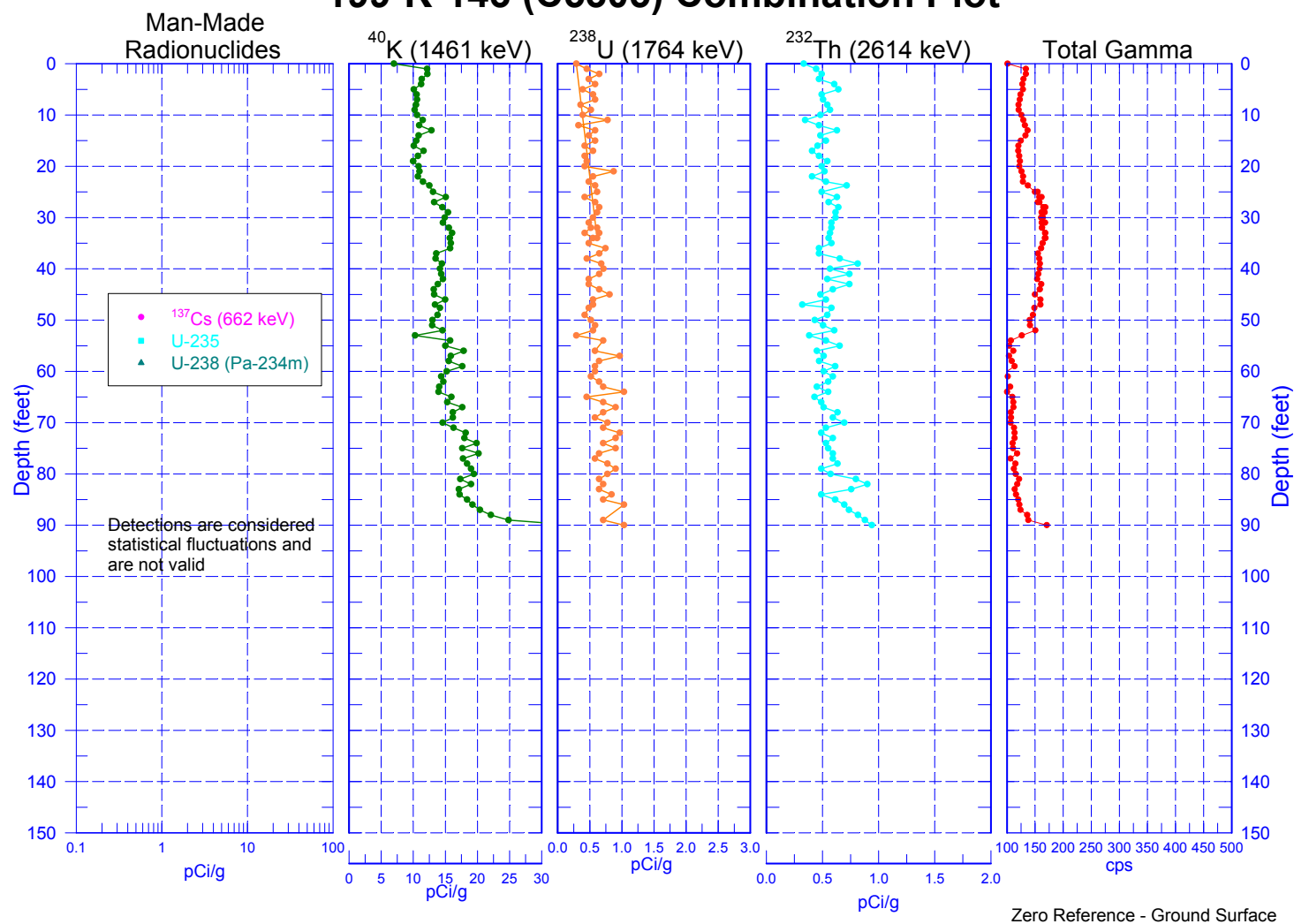
## 199-K-143 (C5305) Natural Gamma Logs



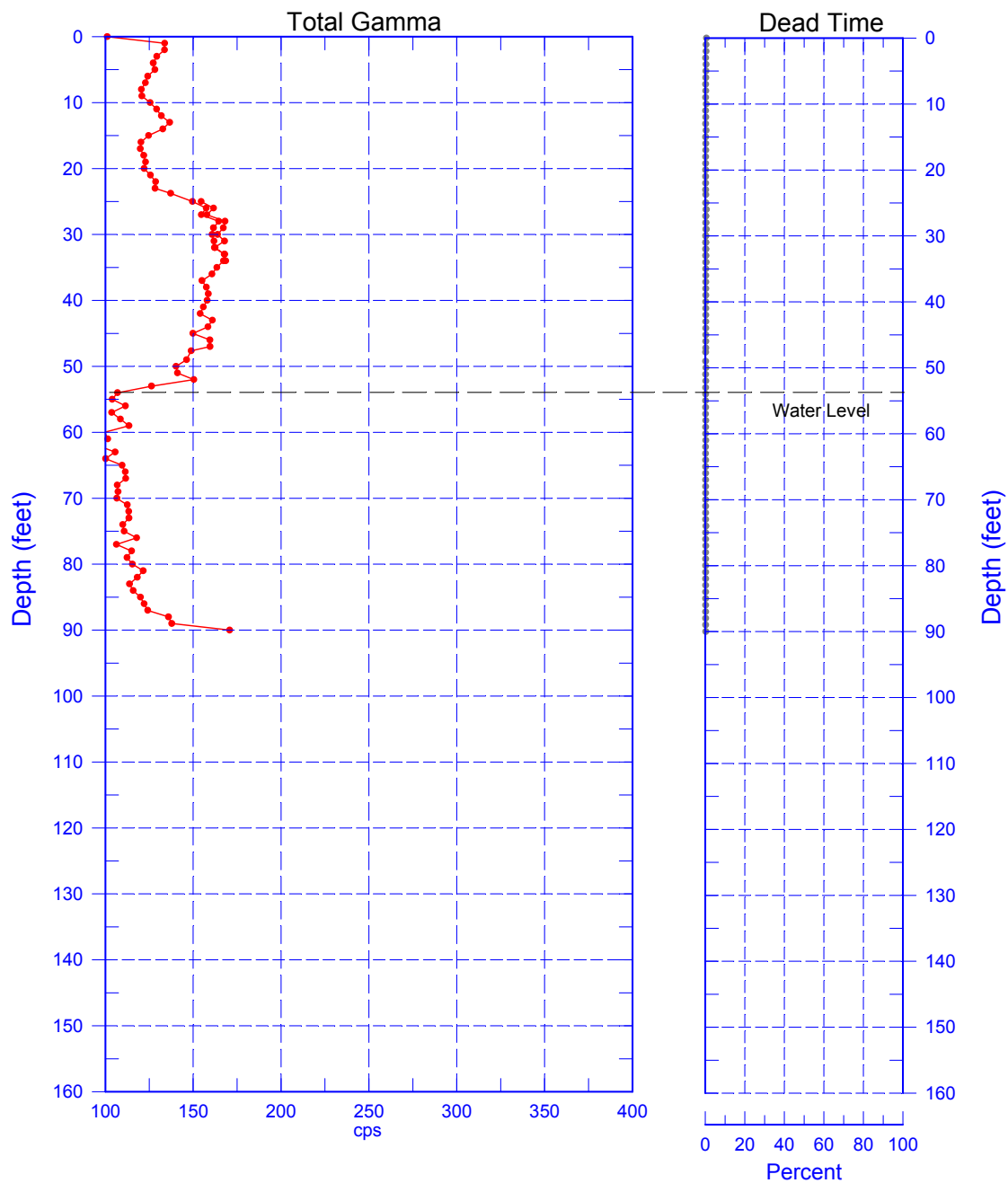
## 199-K-143 (C5305) Combination Plot



## 199-K-143 (C5305) Combination Plot

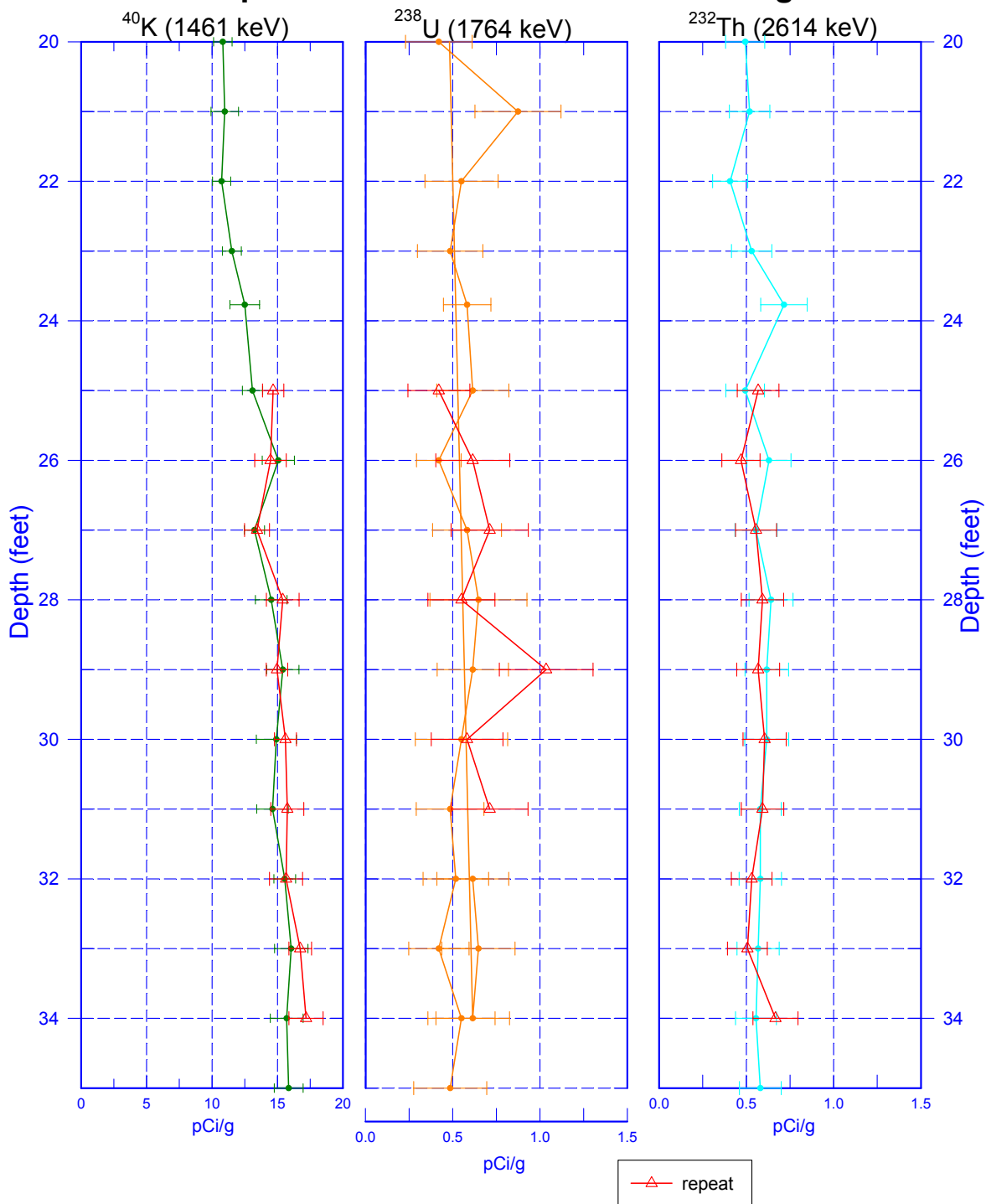


## 199-K-143 (C5305) Total Gamma & Dead Time



Reference - Ground Surface

# **199-K-143 (C5305)** **Repeat Section of Natural Gamma Logs**



Zero Reference - Ground Surface